

REMARKS

Claims 1-57 are pending in the application. Claims 14-19, 33, 34, and 51-55 were withdrawn from consideration without traverse. Claims 1, 13, 20-32, 35-50, 56, and 57 were rejected. Claims 1, 2, 4-9, 12, 13, 20, 21, 23, 30, 32, 37, 38, 43, and 46 are being amended. Claims 59-62 are being added. No new matter is being introduced by way of the claim amendments or new claims.

With regard to Part 3 of the Office Action at hand, the disclosure was objected to because of seemingly contradictory statements in the specification as originally filed, where a low pass filter 6 has a frequency range of 1.5 Hz to 8 kHz (page 7 line 28) and a one-pole low-pass pre-filter limits the frequency range to 460 Hz (page 8, line 3). Applicant is amending the paragraph bridging pages 7 and 8 to describe more accurately the circuit of Fig. 2 as originally filed and to describe the sine-sweep measurements represented in Figs. 6 and 7 of the low-frequency channel circuit 2 in Figs. 1 and 2. Applicant thanks Examiner for identifying the seemingly contradictory statements.

With regard to Part 6 of the Office Action at hand in which claims 13, 32, and 50 were rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement, Applicant refers to Fig. 2 in which electrical elements provide an input impedance of greater than 10 Mohm into the channels 2, 4. Referring to Fig. 2, (i) the input resistance of J6 and resistor R11 in parallel (i.e., $R_{J6} \bullet R11 / (R_{J6} + R11) \approx 200 \text{ Mohm}$) determines the input impedance of the low frequency channel 2, and (ii) the input resistance of buffer U1 in parallel with R21 ($\approx 200 \text{ Mohm}$) determines the input impedance of high frequency channel 4. This description is being added to the specification at page 7, line 5. Because this description is describing the schematic diagram of Fig. 2 as originally filed, no new matter is being added by way of this description. Accordingly, Applicant respectfully submits claims 13, 32, and 50 are supported by Fig. 2 as originally filed and the written description by way of the added paragraph; thus, the rejection under 35 U.S.C. 112, first paragraph should be withdrawn.

With regard to Part 7 of the Office Action at hand in which claims 1-13, 20-32, 35-50, 56, and 57 were rejected under 35 U.S.C. 112, second paragraph for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention, Applicant has

amended the claims to be allowable under 35 U.S.C. 112, second paragraph. Applicant thanks the Examiner for the claim amendment suggestions.

Claims 1-6, 20-28, 35-43, 56, and 57 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,220,836 issued to Harms et al. Claim 1 as now amended recites, “at least two filters coupled to the output of the transducer. . . , at least one of the at least two filters coupled to the transducer at the output of the transducer directly through passive circuit means.” Support for these claim amendments is found in Figs. 1 and 2 and page 7, line 2 through page 8, line 2 in the specification as originally filed. By coupling filter(s) to the transducer at the output of the transducer directly through passive circuit means, the circuit maintains low noise, low distortion, and so forth potentially adversely affected by active circuitry, such as amplifiers, between filter(s) and the transducer.

In contrast, Harms et al. in Fig. 4 includes two filters coupled to the output of a transducer through an operational amplifier configured as a charge amplifier. Thus, Harms et al. does not disclose “at least one of the at least two filters coupled to the transducer at the output of the transducer directly through passive circuit means.”

Claims 1, 2, 4, 6, 20-26, 28, 35-41, 43, 56, and 57 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,205,872 issued to Pflueg. Referring to Figs. 7A and 7B of Pflueg, bandpass filters are coupled to a transducer through operational amplifiers. Thus, Pflueg does not disclose “at least one of the at least two filters coupled to the transducer at the output of the transducer directly through passive circuit means” as now recited in amended Claim 1. Accordingly, Applicant respectfully submits that Claim 1 as now amended should be allowable under 35 U.S.C. 102(b) as being anticipated by Pflueg.

Claims 1, 2, 4, 6-11, 20-26, 28-31, 35-41, 43-48, 56, and 57 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,092,412 issued to Flechsig et al. Referring to Figs. 6 and 7 of Flechsig et al., high and low frequency filters are coupled to a transducer through multiple operational amplifiers. Thus, Flechsig et al. does not disclose “at least one of the at least two filters coupled to the transducer at the output of the transducer directly through passive circuit means” as recited in now amended Claim 1. Accordingly, Applicant respectfully submits that Claim 1 as now amended should allowable under 35 U.S.C. 102(b) as being anticipated by Flechsig et al.

Independent claims 23, 37, and 38 are being amended to include similar claim limitations as now amended Claim 1. Accordingly, these claims should also be allowable under 35 U.S.C. 102(b) as being anticipated by Harms et al., Pflueg, and Flechsig et al. for reasons described above.

Dependent claims 2-11 and 20-22 depend from Claim 1 and should be allowable for at least the same reasons under 35 U.S.C. 102(b). Dependent claims 24-31 and 35-36 depend from Independent Claim 23 and should be allowed for at least the same reasons under 35 U.S.C. 102(b). Dependent claims 39-48 and 56-57 depend from independent claim 38 and should be allowed for at least the same reasons under 35 U.S.C. 102(b).

Claims 13, 32, and 50 were rejected under 35 U.S.C. 103(a) as being unpatentable over Harms et al., Pflueg, or Flechsig et al. These claims depend from the independent claims, so the same arguments apply. Because none of the cited references alone or in combination teaches every claim limitation of the now amended independent claims for reasons described above, Applicant respectfully submits that claims 13, 32, and 50 should be allowable for at least the same reasons as the independent claims from which they depend.

New claims 59, 60, 61, and 62 depend from independent claims 1, 23, 37, and 38, respectively. Applicant respectfully submits that the new claims are allowable under 35 U.S.C. 102(b) and 103(a) for at least the same reasons as described above.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (Claims 1-57 and 59-62) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Mark B. Solomon
Mark B. Solomon
Registration No. 44,348
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 3/8/04